

What is claimed is:

1. A method of manufacturing a thin-plate article having a particular shape, which are formed almost over at least one surface of the thin-plate article, by molding from a plastic material, said method of manufacturing the thin-plate article method by molding from the plastic material comprising steps of:

preparing a first molding die having a first molding die surface,

a pre-molding die which is capable of matching with said first molding die and forming a first volume of molding cavity in matching with said first molding die, and which has an injection port for injecting a plastic material into said molding cavity; and

a second molding die which is capable of matching with said first molding die and forming a second volume of molding cavity smaller than said first volume in matching with said first molding die, and which has a second molding die surface facing to said second volume of molding cavity;

with matching said first molding die with said pre-molding die, injecting a molten plastic material from said injection port into said first volume of molding cavity formed between said first molding die and said pre-molding die; and

after completed said injecting step and before curing of said plastic material, releasing said first molding die from said pre-molding die and then matching said first molding die with said second molding die, wherein said plastic material injected in said injecting step is compressed in said second volume of molding cavity so as to mold the plastic material article between said first molding die and said second molding die.

2. A method of manufacturing a thin-plate article having a particular shape, which are formed almost over at least one surface of the thin-plate article, by

molding from a plastic material, said method of manufacturing the thin-plate article method by molding from the plastic material comprising steps of:

preparing a first molding die having a first molding die surface, and

a second molding die which is capable of matching with said

5 first molding die and forming a molding cavity in matching with said first molding die, and which has a second molding die surface facing to said molding cavity;

with releasing said second molding die from said first molding die, supplying a plastic material having flowability onto a plurality of portions on
10 said first molding die surface of said first molding die to spread said plastic material over said first molding die surface by the flowability of said plastic material; and

matching said second molding die with said first molding die to form said molding cavity, wherein said plastic material filled in said molding cavity in
15 advance is cured with compressed.

3. A method as defined in claim 2, wherein, in said step of supplying said plastic material, said plastic material is supplied to two portions on each of two crossing diagonal lines, four portions in total.

4. A method as defined in claim 3, wherein said plastic material is further supplied to a portion adjacent to a crossed point of said two diagonal lines.

5. A method of manufacturing a thin-plate article having a particular shape,
25 which are formed almost over at least one surface of the thin-plate article, by molding from a plastic material, said method of manufacturing the thin-plate article method by molding from the plastic material comprising steps of:

preparing a first molding die having a first molding die surface; and

a second molding die which is capable of matching with said first molding die and forming a molding cavity in matching with said first molding die, and which has a second molding die surface facing to said molding cavity;

5 with releasing said second molding die from said first molding die, linearly supplying a plastic material having flowability via an elongated nozzle onto said first molding die surface of said first molding die, and simultaneously moving said nozzle and said first molding die relatively in the lateral direction each other, to spread said plastic material over said first
10 molding die surface; and

matching said second molding die with said first molding die to form said molding cavity, wherein said plastic material filled in said molding cavity in advance is cured with compressed.

15 6. A method as defined in claim 1, wherein said thin-plate article is a diffusion plate having quadrangular pyramid protrusions.

7. A method as defined in claim 1, wherein said thin-plate article is a Fresnel lens.

20 8. A method as defined in claim 2, wherein said thin-plate article is a diffusion plate having quadrangular pyramid protrusions.

25 9. A method as defined in claim 5, wherein said thin-plate article is a diffusion plate having quadrangular pyramid protrusions.

10. A method as defined in claim 2, wherein said thin-plate article is a Fresnel lens.

11. A method as defined in claim 5, wherein said thin-plate article is a Fresnel lens.

5 12. A method of manufacturing a thin-plate article having a particular shape, which are formed almost over at least one surface of the thin-plate article, by molding from a plastic material, said method of manufacturing the thin-plate article method by molding from the plastic material comprising steps of:

preparing a plastic material supply station,

10 a first molding station provided adjacently to said plastic material supply station,

a second molding station provided adjacently to said plastic material supply station in a different position from that of said first molding station,

15 a first molding die provided respectively in association with each of said first molding station and said second molding station, said first molding die being movable between said associated molding station and said plastic supply station, said first molding die having a first molding die surface,

20 a second molding die provided at each of said first molding station and said second molding station, said second molding die being capable of matching with said first molding die and forming a molding cavity in matching with said first molding die, said second molding die having a second molding die surface facing to said molding cavity; and

25 an elongated nozzle provided at said plastic material supply station;

moving said first molding die associated with said first molding station to said plastic material supply station;

linearly supplying a plastic material having flowability via an elongated nozzle onto said first molding die surface of said first molding die, and simultaneously moving said nozzle and said first molding die relatively in the lateral direction each other, to spread said plastic material over said first molding die surface;

moving said first molding die associated with said first molding station to said first molding station;

matching said second molding die provided at said first molding station with said first molding die which has been moved to said first molding station to form said molding cavity, wherein said plastic material filled in said molding cavity in advance is cured with compressed; and

during at least one of the steps after said step for supplying said plastic material, moving said first molding die associated with said second molding station to said plastic material supply station, and performing the same steps as those after said step for preparing to spread said plastic material over said first molding surface of said first molding die associated with said second molding station.

13. A method as defined in claim 12, further includes a step of leveling said plastic material, which has been supplied to said first molding surface of said first molding die in said plastic material supply station, during the relatively lateral movement between said nozzle and said first molding die.

14. A method as defined in claim 13, wherein said plastic material is leveled by means of a leveling roller.